

# The World Book Encyclopedia

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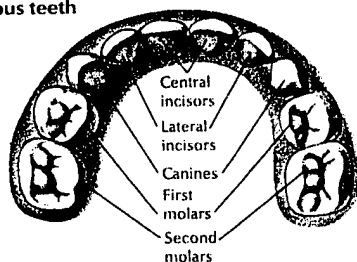
## Kinds of teeth

These illustrations show the kinds of deciduous and permanent teeth and their positions in the mouth.

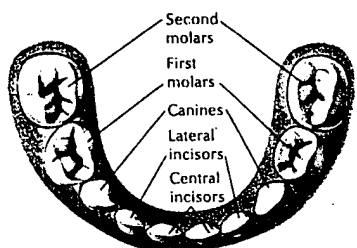
WORLD BOOK diagrams by Charles Wellek

## Deciduous teeth

Upper teeth

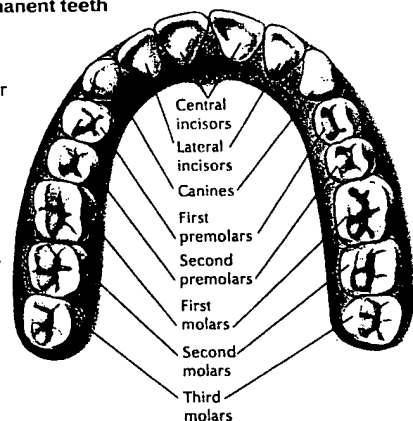


Lower teeth

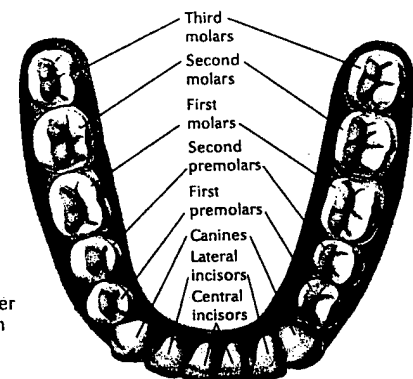


## Permanent teeth

Upper teeth



Lower teeth



## Ages at which teeth appear\*

Deciduous teeth:	Lower teeth	Upper teeth
Central incisors	6 months	7 months
Lateral incisors	7 months	9 months
Canines	16 months	18 months
First molars	12 months	14 months
Second molars	20 months	24 months

Permanent teeth:	Lower teeth	Upper teeth
Central incisors	6-7 years	7-8 years
Lateral incisors	7-8 years	8-9 years
Canines	9-10 years	11-12 years
First premolars	10-12 years	10-11 years
Second premolars	11-12 years	10-12 years
First molars	6-7 years	6-7 years
Second molars	11-13 years	12-13 years
Third molars	17-21 years	17-21 years

\*The ages given are approximate. In many cases, individual teeth may erupt at an earlier or later age.

called *cusps* or *dogteeth*. The upper canines are sometimes known as *eyeteeth*.

*Premolars* are used to crush and grind food. They have a broad, lumpy top instead of a sharp biting edge. The small surface lumps are called *cusps*. The cusps enable the teeth to mash pieces of food.

Premolars are sometimes called *bicuspid*s because, in most cases, they have two cusps. The prefix *bi* means *two*. The first upper premolars normally have two roots. The other premolars have one root. The premolars erupt in the place of the deciduous molars.

*Molars*, like premolars, are used to grind food. They are shaped much like premolars but are larger. The various molars normally have three to five cusps and two or three roots.

The permanent molars do not form beneath any of the deciduous teeth. They develop as the jaws grow, which makes space for them. Some adults lack one or more of the third molars, which are commonly called *wisdom teeth*. In many cases, the jaws do not grow large enough to provide space for the wisdom teeth. As a result, the wisdom teeth may become *impacted*—that is, wedged between the jawbone and another tooth. The wisdom teeth must then be removed.

## Parts of a tooth

A tooth consists of four kinds of tissues. They are (1) pulp, (2) dentin, (3) enamel, and (4) cementum. Connective tissue surrounds the root of the tooth. This tissue, called the *periodontal ligament*, holds the root in the socket in the jaw.

**Pulp** is the innermost layer of a tooth. It consists of connective tissue, blood vessels, and nerves. The blood vessels nourish the tooth. The nerves transmit sensations of pain to the brain.

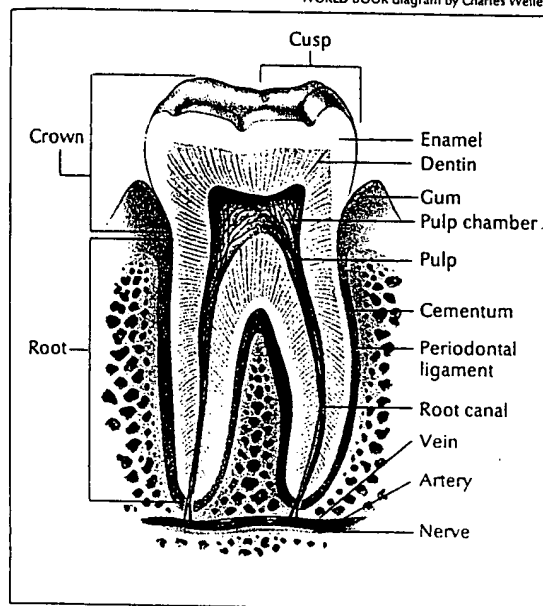
The pulp has two parts, the *pulp chamber* and the *root canal*. The pulp chamber lies in the crown of the tooth. The root canal lies in the root of the tooth. Blood vessels and nerves enter the root canal through a small hole at the tip of the root. They extend through the root canal and into the pulp chamber.

**Dentin** is a hard, yellow substance that surrounds the pulp. It makes up most of a tooth. Dentin is harder than bone. It consists mainly of mineral salts and water but also has some living cells.

### Parts of a tooth

The *crown*, or visible part of a molar tooth, includes projections called *cusps*. The *root* extends into the bone of the jaw. A tissue called *dentin* makes up most of the tooth. A layer of *enamel* covers the dentin of the crown, and *cementum* overlies the dentin of the root. Within the dentin lies the *pulp*, including the *pulp chamber* and the *root canal*, through which blood vessels and nerves enter the tooth. The *periodontal ligament* surrounds the root and holds the tooth in its socket.

WORLD BOOK diagram by Charles Weltek



**Enamel** overlies the dentin in the crown of the tooth. It forms the outermost covering of the crown. Enamel is the hardest tissue in the body. It enables a tooth to withstand the pressure placed on it during chewing. Enamel consists of mineral salts and a small amount of water. Enamel is white but transparent. The yellow color of the dentin shows through the enamel, and so most teeth appear slightly yellowish.

As a person grows older, small amounts of enamel begin to wear away. This process, called *attrition*, results from the use of the teeth over a long period. As the enamel wears away, the dentin becomes exposed.

**Cementum** overlies the dentin in the root of the tooth. In most cases, the cementum and enamel meet where the root ends and the crown begins. As the surface of the tooth wears away, the tooth grows farther out of its socket, exposing the root. These areas may then become more sensitive to hot and cold liquids. Cementum is about as hard as bone. Like dentin and enamel, it consists mainly of mineral salts and water.

**Periodontal ligament** consists of small fibers. These fibers extend through the cementum and into the bony socket, which is called the *alveolus*. Besides anchoring the tooth in the alveolus, the periodontal ligament serves as a shock absorber during chewing.

### Care of the teeth and gums

Most cases of tooth decay and gum disease could be prevented if people took proper care of their teeth and gums. Proper care requires (1) a good diet, (2) cleaning

the teeth after eating, and (3) dental checkups.

**A good diet.** Dentists advise people to eat well-balanced meals. Such meals include a variety of foods and provide the *nutrients* (nourishing substances) needed by the teeth and gums. Nutrition experts divide foods into groups to help people plan well-balanced meals. The article *Nutrition* describes the Food Guide Pyramid, developed by the U. S. Department of Agriculture (USDA). The pyramid shows the recommended number of daily servings of the major food groups in a healthful diet.

Dentists also urge people to eat fewer sugary foods because these foods contribute to tooth decay. Bacteria in the mouth digest sugar and produce an acid as a result. The acid dissolves tooth enamel, forming a cavity.

Foods that have a large amount of sugar include candies, pastries, most breakfast cereals, and sweetened canned fruits. Many people eat sugary foods as snacks. In place of sugary foods, dentists advise people to snack on such foods as fresh fruits and vegetables, cheeses, and nuts. They also recommend that people drink skim milk or unsweetened fruit and vegetable juices instead of soft drinks and other sugar-sweetened beverages.

Dentists further recommend that children drink water with chemical compounds called *fluorides*. Fluorides are absorbed by the enamel as the teeth grow. They help the teeth resist acid that forms cavities. Some communities have a water supply that naturally contains fluorides. Many other communities add fluorides to the water supply. But some people oppose *fluoridation* (the addition of fluorides to water supplies). For information on the arguments, see *Fluoridation*.

Fluorides may be applied directly to a child's teeth during a dental checkup. In some cases, dentists prescribe a fluoride substance that children can apply at home. Most dentists also advise children to brush their teeth with a toothpaste that contains fluorides.

**Cleaning the teeth.** Dentists advise people to clean their teeth by brushing after every meal and by using *dental floss* once a day. Dental floss is a thin thread that comes in a roll. It is used to clean the areas between teeth and under the gum line. Brushing and flossing remove trapped food particles and *plaque* from the teeth. Plaque is a sticky film that consists of saliva, food particles, and bacteria. The bacteria digest certain foods, particularly sugars, and form an enamel-dissolving acid.

To brush the teeth, you should use a small, soft toothbrush and a toothpaste that contains fluorides. There are several methods of brushing. You should use the one recommended by your dentist. One commonly recommended method is to place the brush against the teeth at a slight angle, with the bristles pointed toward the gums. Brush the upper teeth with a downward, sweeping motion. Brush the lower teeth with an upward, sweeping motion. Clean both the outside and the inside surfaces of the teeth in this way. Use a scrubbing motion to clean the biting surfaces of the premolars and molars. Lastly, brush the tongue to remove food particles and bacteria, which contribute to bad mouth odors. Then rinse the mouth thoroughly with water or mouthwash.

To floss the teeth, cut a piece of floss about 18 inches (46 centimeters) long from the roll. Wrap one end of the floss around each middle finger. Using the index fingers and thumbs, gently guide the floss between two teeth.